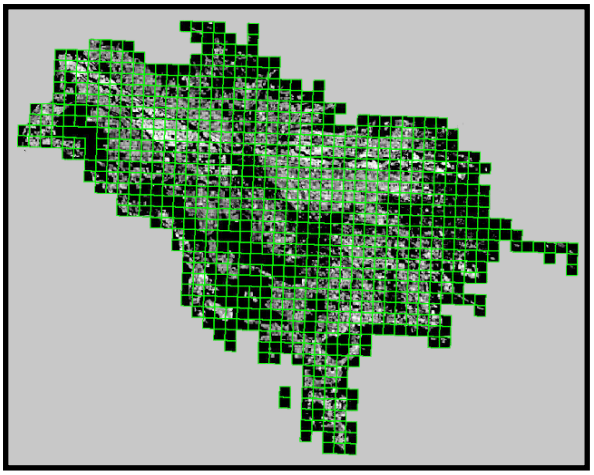
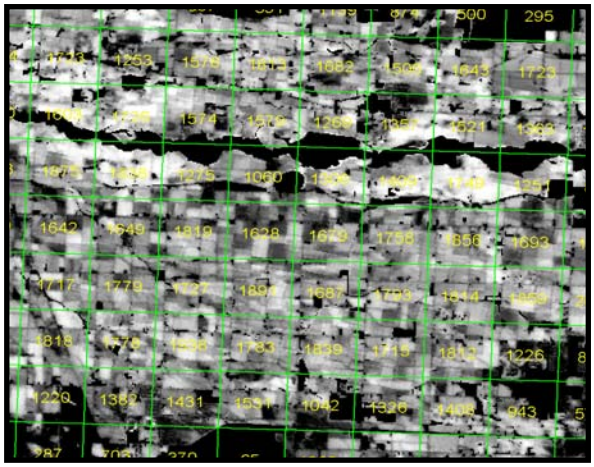
Hydrologic Modeling



The cells of the Treasure Valley Hydrologic Model are 1 square mile in area.



Model cells superimposed on METRIC evapotranspiration model. The numbers are total acre-feet of seasonal evapotranspiration per cell.

Model Row	Model Column	Flood Irrigated Acres	Water Budget evapotranspiration (feet)	METRIC evapotranspiration model (feet)
10	17	631	2.42	2.40
11	18	623	2.42	2.69
28	25	622	2.42	2.17

The original evapotranspiration data used in the water budget compared with evapotranspiration from METRIC for 3 representative model cells.

The Idaho Department of Water Resources' Treasure Valley Ground Water Model requires a water budget, which includes evapotranspiration . The model is very sensitive to changes in recharge, which is a function of evapotranspiration . The present coefficient based method assumes evapotranspiration is constant throughout the modeled area, and assumes the same average evapotranspiration for all crop types. Since evapotranspiration is not constant throughout the model domain, the ability to refine the evapotranspiration spatially with METRIC results in a calibrated model that more closely reflects actual conditions. This refinement is important as the Idaho Department of Water Resources begins using smaller grid sizes (e.g., 1/4 mile) to create sub-models of smaller areas of the valley.

We compared original evapotranspiration and METRIC evapotranspiration model for flood-irrigated lands within the domain of the Treasure Valley ground water model. The cells in the table were identified as being the three cells having the greatest flood-irrigated acreage. Each model cell is one square mile in area (640 acres). The variability shown by METRIC evapotranspiration model yields a more accurate water budget and hence, more accurate model results.